

U.S.S.N. 09/867,046

Remarks

Applicant thanks the Examiner for kindly allowing claims 1-12, 27-37, 44-46, 48 and 50. Claims 39-43, 49, 51 and 52 have been cancelled without prejudice. Claims 13 and 38 have been amended. New claim 53 has been added. The amendments to claims 13 and 38 were made to more clearly recite the nature of the modified surface and not for reasons related to patentability. New claim 53 is original claim 52 rewritten in independent form.


Applicant submits that the amendments to claims 13 and 38 render moot the rejection of claims 13-26, 38, and 47 under 35 U.S.C. § 112, second paragraph. There being no further rejections of record as to claims 13-26, 38, 47 and 53, Applicant submits that claims 13-26, 38, 47 and 53 are in condition for allowance.

Applicant further submits that the cancellation of claims 39-43, 49 and 51 renders moot the rejection of claims 49 and 51 under 35 U.S.C. § 102(b) over Liu et al. and the rejection of claims 39-43 under 35 U.S.C. § 103 over Liu et al.

All of the claims now pending in the application are in condition for allowance. Therefore, Applicant respectfully requests that the claims receive a notice of allowance and that the application be passed to issue. Please charge any additional fees that may be required or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

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LISTING OF THE CLAIMS

1. (Previously presented) A method of modifying a thermal barrier assembly comprising a channel, said method comprising:
- exposing a surface of said channel to a plasma comprising metal moieties;
  - and
  - depositing said metal moieties on the surface of said channel,
- wherein said thermal barrier assembly comprises at least a portion of a casing.
2. (Original) The method of claim 1, wherein said channel comprises a surface treatment prior to said depositing step, said method further comprising removing at least a portion of said surface treatment from said channel.
- C/ 3. (Original) The method of claim 1, wherein said metal is selected from the group consisting of aluminum, nickel, chromium, iron, graphite, molybdenum, copper, cobalt, tungsten, indium, manganese, zirconium, zinc, cesium, yttrium, antimony, and oxides, carbides, nitrides and silicides thereof, and alloys and mixtures thereof.
4. (Previously amended) The method of claim 1, wherein said thermal barrier assembly comprises at least a portion of a casing selected from the group consisting of a window casing, door casing and curtain wall casing.
5. (Original) The method of claim 1, wherein said depositing comprises forming a metal coating on the surface of said channel.
6. (Original) The method of claim 1, wherein said coating has a thickness of no greater than about 2 mm.
7. (Original) The method of claim 1, wherein said channel is defined by a substrate comprising metal.

8. (Original) The method of claim 7, wherein said metal is aluminum.

9. (Original) The method of claim 1, wherein said channel is defined by a substrate comprising a polymer.

10. (Original) The method of claim 1, wherein said channel comprises a first side wall, a second side wall positioned parallel to said first side wall and spaced no greater than about 2.5 cm from said first side wall.

11. (Original) The method of claim 1, wherein said thermal barrier assembly comprises a window casing.

cl 12. (Original) The method of claim 1, wherein said thermal barrier assembly comprises a door casing.

13. (Currently amended) A thermal barrier assembly comprising:  
a channel comprising ~~a modified surface~~; and a layer of metal bonded to a surface of said channel, said metal having been deposited on said channel surface from a plasma to form a modified surface.

wherein said thermal barrier assembly comprises at least a portion of a casing.

14. (Original) The thermal barrier assembly of claim 13, further comprising an adhesive composition bonded to the modified surface of said channel.

15. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition comprises polyurethane.

16. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition exhibits no greater than 5 % shrinkage when bonded to said surface and subjected to the % Shrinkage Test Method.

17. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition exhibits no greater than 1% shrinkage when bonded to said surface and subjected to the % Shrinkage Test Method.

18. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition exhibits a shear strength of at least 2500 psi shear strength at room temperature after being subjected to the Thermal Cycling Method.

19. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition exhibits a shear strength of at least 3000 psi at room temperature after being subjected to the Thermal Cycling Method.

20. (Original) The thermal barrier assembly of claim 14, wherein said adhesive composition exhibits a shear strength of at least 7500 psi at room temperature after being subjected to the Thermal Cycling Method.

21. (Original) The thermal barrier assembly of claim 13, wherein said metal is selected from the group consisting of aluminum, nickel, chromium, iron, graphite, molybdenum, copper, cobalt, tungsten, indium, manganese, zirconium, zinc, cesium, yttrium, antimony, and oxides, carbides, nitrides and silicides thereof, and alloys and mixtures thereof.

22. (Original) The thermal barrier assembly of claim 13, wherein said channel is defined by a substrate comprising metal.

23. (Original) The thermal barrier assembly of claim 22, wherein said metal comprises aluminum.

24. (Original) The thermal barrier assembly of claim 13, wherein said channel is defined by a substrate comprising a polymer.

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25. (Previously presented) A window casing comprising the thermal barrier assembly of claim 38.

26. (Previously presented) A door casing comprising the thermal barrier assembly of claim 38.

27. (Previously presented) A process for making a thermal barrier assembly, said process comprising:

exposing a surface of a channel of a thermal barrier assembly to a plasma comprising metal moieties; and  
depositing said metal moieties on the surface of said channel,  
wherein said thermal barrier assembly comprises at least a portion of a casing.

28. (Original) The process of claim 27, further comprising contacting the metal surface of said channel with an adhesive composition.

29. (Original) The process of claim 27, wherein prior to said depositing, said channel comprises a surface treatment disposed on the channel surface, said process further comprising removing at least a portion of said surface treatment prior to depositing said metal moieties.

30. (Original) The process of claim 27, wherein said metal is selected from the group consisting of aluminum, nickel, chromium, iron, graphite, molybdenum, copper, cobalt, tungsten, indium, manganese, zirconium, zinc, cesium, yttrium, antimony, and oxides, carbides, nitrides and silicides thereof, and alloys and mixtures thereof.

31. (Original) The process of claim 28, wherein said adhesive composition comprises polyurethane.

32. (Original) The process of claim 27, wherein said surface treatment is selected from the group consisting of polyester, melamine, mill finish, conversion coating, primer, paint, acrylic, polyester, enamel, polyurethane, fluoropolymer, anodic finishes and combinations thereof.

33. (Original) The process of claim 27, wherein said channel is defined by a substrate comprising metal.

34. (Original) The process of claim 33, wherein said metal comprises aluminum.

35. (Original) The process of claim 27, wherein said channel is defined by a substrate comprising a polymer.

C/ 36. (Original) A process for making a window casing comprising the process of claim 27.

37. (Original) A process for making a door casing comprising the process of claim 27.

38. (Currently amended) A thermal barrier assembly comprising:

a channel comprising ~~a modified surface comprising~~ a layer of metal bonded to a surface of said channel, said metal having been deposited onto said channel surface from a plasma to form a modified surface; and

an adhesive composition bonded to the modified surface of said channel, said adhesive composition comprising polyurethane.

said channel, said adhesive composition comprising polyurethane.

Claims 39-43 (canceled)

44. (Previously presented) A process for making a thermal barrier assembly, said process comprising:

providing a thermal barrier assembly comprising a channel, and a surface treatment disposed on a surface of said channel;

exposing said treated surface of said channel to a plasma comprising metal moieties;

removing at least a portion of said surface treatment; and

depositing said metal moieties on the surface of said channel.

45. (Previously presented) The process of claim 44, wherein said surface treatment is selected from the group consisting of polyester, melamine, mill finish, conversion coating, primer, paint, acrylic, polyester, enamel, polyurethane, fluoropolymer, anodic finishes and combinations thereof.

46. (Previously presented) A process for making a thermal barrier assembly, said process comprising:

exposing a surface of a channel of a thermal barrier assembly to a plasma comprising metal moieties;

depositing said metal moieties on the surface of said channel; and

contacting the metal surface of said channel with an adhesive composition comprising polyurethane.

47. (Previously presented) A casing comprising the thermal barrier assembly of claim 13.

48. (Previously presented) The method of claim 1, wherein said thermal barrier assembly comprises a unitary structure.

49. (Previously presented) A thermal barrier assembly comprising:

a first structural component;

a second structural component;

a channel disposed between said first structural component and said second structural component,

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a layer of metal bonded to a surface of said channel, said metal having been deposited on said channel surface from a plasma; and  
an adhesive composition disposed in said channel,  
said first structural component being bonded to said second structural component through said adhesive composition.

50. (Previously presented) The method of claim 1, wherein said channel comprises a surface treatment disposed on said channel prior to exposing said channel surface to said plasma.

C/ Claims 51 and 52 (cancelled)

53. (New) A window casing, door casing, or curtain wall casing comprising a thermal barrier comprising:

a thermal barrier assembly comprising  
a channel comprising a modified surface; and  
a layer of metal bonded to a surface of said channel, said metal layer having been deposited onto said channel surface from a plasma; and  
an adhesive composition bonded to the modified surface of said channel.